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BORDEN LADNER GERVAIS LLP
WORLD EXCHANGE PLAZA
100 QUEEN STREET SUITE 1100
OTTAWA, ON K1P 1J9
CANADA

EXAMINER	
AST, FATIMA M	

ART UNIT	PAPER NUMBER
2143	

DATE MAILED: 05/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/032,014	AZAD, MINA M.	
	Examiner	Art Unit	
	Fatima Ast	2143	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 December 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 May 2002* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date. _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Claims 1-23 are pending.

Specification

1. The disclosure is objected to because of the following informalities:

2. Typographical errors:

a. Paragraph [0001] line 4: "an Multi-Protocol" should be "a Multi-Protocol"

b. Paragraph [00024] line 8: "whole path through LSR1" apparently should be "whole path through LSR3". Based on the context of this paragraph of the disclosure, it appears the applicant intends to refer to the destination LSR of the complete LSP being described.

c. Paragraph [00024] line 10: "node 100". There is no element "node 100" indicated in Figure 1. It appears the applicant intends to refer to a node on the path of LSR0→LSR1→LSR2→LSR3. Examiner will assume, for purposes of prior art examination, that the intended reference was to "node 200".

d. Paragraph [00037] line 7: "transport label filed" should be "transport label field".

e. Paragraph [00037] line 18: "laced" should be "placed".

Appropriate correction is required.

Drawings

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the

description: "network 10" (see disclosure [00022] line 2). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-6, 9 and 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Petersen (US 6,049,530) in view of Rodriguez (TCP/IP Tutorial and Technical Overview; Rodriguez, Adolfo et al.).

6. Regarding claim 1, Petersen discloses a method of routing a special type of a data transmission unit (DTU) between a source node and a destination node in a network, both the source node and the destination node being capable of processing the special type of data transmission unit (column 2 line 60 – column 3 line 25), the method comprising:

a) selecting intermediate nodes to be traversed by the DTU when transmitted from the source node to the destination node (column 4 lines 59-67, column 5 lines 37-52), where nodes are polled during an "activation phase" in order to determine their ability to be selected to participate in a "segment performance monitoring" session;

b) designating the intermediate nodes selected as being in a specific path of nodes between the source node and the destination node (column 4 lines 29-37), where the AAL2 connection is the path containing the source, intermediate and destination nodes which will be traversed by the DTU;

c) creating the DTU at the source node (column 6 lines 1-29), where the special type of DTU is one or more AAL2 packets with segment performance factors; and

d) transmitting the DTU from the source node to the destination node along the specific path of nodes (Fig. 3, column 8 lines 42-46, column 9 lines 4-29).

7. Petersen does not specifically enumerate a network that only allows unidirectional routing. Rodriguez discloses unidirectional routing in a label switched path (LSP) (Section 18.2.3) and further discloses that LSP in an MPLS network can be implemented over an ATM network (Section 18.2.1.2). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to combine the LSP and resulting unidirectional routing of the MPLS network of Rodriguez with the AAL2 connection of Petersen in order to gain the advantage of identifying optimum paths

through a network, traffic engineering and quality of service routing as taught by Rodriguez.

8. Regarding claim 9, Petersen discloses a method of segmenting a predefined path through a network (column 4 lines 19-22), the method comprising:

a) determining which nodes on the network are on the predefined path (column 4 lines 29-37, column 5 lines 1-25), where during the "activation phase" an activation packet is transmitted to all nodes on the connection path;

b) defining segment nodes that define beginning and ending nodes for a network segment (column 4 lines 53-59, column 5 lines 1-25, column 5 lines 53-67), where the activation phase defines the segment nodes and where the segment performance monitoring processing point defines start and end points of the segments for which it performs the monitoring; and

c) configuring a network segment between beginning and ending nodes by instructing intervening nodes on how to forward data transmission units configured for that network segment (column 5 lines 1-25) where in the activation phase, DTU (activation packets) are transmitted along a segment and each node on the segment is instructed to act on that packet and then forward it.

9. Petersen does not specifically enumerate a network that only allows unidirectional transmission. Rodriguez discloses unidirectional routing in a label switched path (LSP) (Section 18.2.3) and further discloses that LSP in an MPLS network can be implemented over an ATM network (Section 18.2.1.2). It would have been obvious to combine the LSP and resulting unidirectional routing of the MPLS

network of Rodriguez with the AAL2 connection of Petersen in order to gain the advantage of identifying optimum paths through a network, traffic engineering and quality of service routing as taught by Rodriguez.

10. Regarding claim 2 Petersen discloses the special type of a data transmission unit is an OAM (operation and maintenance) data transmission unit (Fig. 4-6, column 9 line 36 – column 10 line 5).

11. Regarding claims 3 and 14, Petersen discloses the data special type of a data transmission unit is a data transmission unit for use in determining a performance of a network segment (column 6 line 1-12), where the AAL2 data packets are used for segment performance monitoring.

12. Regarding claims 4 and 13, Rodriguez discloses a MPLS (Multi-Protocol Label Switched) network (Section 18.1 MPLS overview).

13. Regarding claim 5, Petersen discloses step b) of claim 1 includes notifying the intermediate nodes of the specific path (column 5 line 1-25), where during the activation phase the path from the source node to the destination node, through the intermediate nodes is established and the intermediate nodes each receive the activation packet.

14. Regarding claim 6, Peterson discloses step b) of claim 5 further includes reserving resources in the intermediate nodes for the specific path (column 5 line 1-25), where the intermediate nodes determine if they can allocate resources.

15. Claims 15, 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Petersen.

16. Regarding claims 15 and 18, Petersen discloses a method of determining a performance of a network path, the method comprising:

a) Dividing the network path into segments, each segment having a source node defining a beginning of the segment and a destination node defining an ending of the segment (column 5 lines 53-67);

b) Transmitting a specialized data transmission unit from the source node to the destination node (column 6 lines 1-12);

c) Receiving the specialized data transmission unit at the destination node (column 6 line 56 – column 7 line 4);

d) Calculating the performance of the segment based on data contained in the specialized data transmission unit (column 10 lines 26-45); and

17. Petersen does not specifically enumerate determining if there is a fault on the segment based on whether the specialized data transmission unit is received by the destination node within a given amount of time, however, Petersen does teach determining if there is a fault based on "segment performance characterization factors" and further teaches that "it will be readily apparent to one skilled in the art that other segment performance characterization factors may be employed to monitor segment performance..." (column 10 lines 26-45). Furthermore, Petersen teaches a "time data field" wherein such "time data field" is used in monitoring the amount of a time a performance monitoring session takes, and further allowing intermediate nodes to determine if resources can be allocated for such a monitoring session. As Petersen teaches the monitoring of given amounts of time in the transmission of specialized

DTUs, where such transmissions constitute a performance monitoring session, and as Petersen teaches other segment performance factors could be used in the performance monitoring, it would have been obvious to determine the presence of a fault in the segment based on the to receipt of a DTU at the destination node within a given amount of time, the motivation to do so being that all elements for such determination are taught in the invention of Petersen and furthermore, measuring latency is well known in the art.

18. Regarding claim 17, Petersen discloses step d) of claim 15 includes determining a transit time of the specialized data transmission unit through the segment (column 12 lines 53-67).

19. Claims 16 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Petersen as applied to claims 15 and 18 above and further in view of Rodriguez.

20. Regarding claims 16 and 19, Petersen does not specifically enumerate a network path is in an MPLS network. Rodriguez discloses unidirectional routing in a label switched path (LSP) (Section 18.2.3) and further discloses that LSP in an MPLS network can be implemented over an ATM network (Section 18.2.1.2). It would have been obvious to combine the LSP and resulting unidirectional routing of the MPLS network of Rodriguez with the AAL2 connection of Petersen in order to gain the advantage of identifying optimum paths through a network, traffic engineering and quality of service routing as taught by Rodriguez.

21. Claims 20-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Klevans (US 6,885,677) in view of Petersen and Rodriguez.

22. Regarding claim 20, Klevans discloses a network router for routing data transmission units (DTUs), the router including:

-a receiving module for receiving DTUs (Fig. 5 elements 70, 76);

-a transmitting module for transmitting DTUs (Fig. 5 elements 80, 74);

-a switch core module placed between the receiving module and the transmitting module for routing DTUs between the receiving and the transmitting modules (Fig. 5 elements 78, 72); and

-a diagnostic module for determining a performance of a network path of the domain, (Fig. 5 element 96)

23. Klevans does not specifically enumerate the diagnostic module being for processing specialized DTUs received by the receiving module and for creating specialized DTUs to be transmitted by the transmitting module, wherein the router executes computer readable and computer executable instructions for implementing a method for determining the performance of the network path, the method including:

a) if the network router is a source node for the network path, transmitting the specialized DTUs to a destination node; and

b) if the network router is a destination node for the network path, receiving the specialized DTUs and performing an action chosen from the group consisting of:

b1) calculating the performance of the network path based on data contained in the specialized DTU; and

b2) determining if there is a fault on the network path based on whether a specialized DTU is received within a given amount of time.

24. However, these method steps correspond to the method steps of Claims 15 and 18, which have been rejected over Petersen as noted above, therefore these method steps are similarly rejected. It would have been obvious to replace the node(s) of Petersen with the router of Klevans, such that Klevans router would perform the transmission, receipt and processing of DTUs as taught by Petersen, because it is well known that a node is simply a junction on a network, a router is a junction on a network or between two networks. It would be obvious for the node of Petersen to be a router, switch or some other type of networking device.

25. Klevans in view of Petersen does not specifically enumerate a domain which only allows unidirectional flow. Rodriguez discloses unidirectional routing in a label switched path (LSP) (Section 18.2.3) and further discloses that LSP in an MPLS network can be implemented over an ATM network (Section 18.2.1.2). It would have been obvious to combine the LSP and resulting unidirectional routing of the MPLS network of Rodriguez with the router and AAL2 connection of Klevans in view of Petersen in order to gain the advantage of identifying optimum paths through a network, traffic engineering and quality of service routing as taught by Rodriguez.

26. Regarding claims 21, Rodriguez discloses the network is an MPLS (Multi-Protocol Label Switched) network (as noted in claim 4 above) where the paths of the network are label switched paths as set up by an MPLS network.

27. Regarding claims 22 and 23, Petersen discloses the special type of a data transmission unit is an OAM (operation and maintenance) data transmission unit (Fig. 4-6, column 9 line 36 – column 10 line 5).

28. Claims 7-8, 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Petersen in view of Rodriguez as applied to claims 1 and 9 above, and further in view of Klevans.

29. Regarding claims 7 and 10, Petersen in view of Rodriguez does not specifically enumerate the source node and the destination nodes are routers. Klevans teaches a router as noted in claim 20 above. It would have been obvious for the nodes of Petersen to be a router, the motivation for such being the same as that noted in claim 20 above.

30. Regarding claims 8 and 11, Klevans discloses the routers are label switched routers (LSRs) (column 3 lines 48-54).

31. Regarding claim 12, Klevans discloses using label distribution protocols (LDPs) (column 3 lines 39-42).

32. Claims 16 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Petersen as applied to claims 15 and 18 above, and further in view of Klevans.

33. Regarding claims 16 and 19 Klevans discloses the network is an MPLS (Multi-Protocol Label Switched) network (***) where the paths of the network are label switched paths as set up by an MPLS network. It would have been obvious ***

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fatima Ast whose telephone number is (571) 272-7217. The examiner can normally be reached on M-F, 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wiley can be reached on (571) 272-3923. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Fatima Ast
Examiner
Art Unit 2143

FMA

DAVID WILEY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100